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### Method and system for a unicast endpoint client to access a multicast internet protocol (IP) session

DH Shur, ... - US Patent 6,259,701, 2001 - Google Patents

... Page 3. US Patent US 6,259,701 BI Jul. 10, 2001 Sheet 2 of 7 FIG. 2 201 **MULTICAST-UNICAST SERVER** 203 204 **MULTI-UNICAST ADDRESS TRANSLATION AND PACKET FORWARDING TO MULTICAST NETWORK** FIG. 3 Page 4. US Patent US 6,259,701 BI Jul. ...

Cited by 38 - Related articles - All 2 versions

### Method for a unicast endpoint client to access a multicast internet protocol (IP) session and to serve as a redistributor of such session

SH Nurenberg, DH Shur, ... - US Patent 6,181,697, 2001 - Google Patents

... US Patent Jan. 30, 2001 US 6,181,697 BI Sheet 2 of 5 FIG. 2 1 201 **MULTICAST-UNICAST SERVER** 203 202 **MULTI-UNICAST ADDRESS TRANSLATION AND PACKET FORWARDING TO MULTICAST NETWORK** ^ FIG. 3 301 304 x^ 303-- 305- BROWSER ^- 302 \* ^ LAUNCH, ...

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### Optimal partition of QoS requirements on unicast paths and multicast trees

(PDF)

DH Lorenz, ... - IEEE/ACM Transactions on Networking (TON), 2002 - portal.acm.org

... QoS routing, is briefly discussed in Section V. For clarity, we detail here only the framework for **unicast** connections. ... However, such a **translation** cannot be applied in general, eg, due to complications created by topology aggregation and ... 1This is also true for any **multicast** tree, ...

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### Optimal partition of QoS requirements on unicast paths and multicast trees

(PDF)

DH Lorenz, ... - ... Annual Joint Conference of the IEEE, ... 1999 - ieeeexplore.ieee.org

... discussed in Section V. For clarity, we detail here only the framework for **unicast** connections. The definitions and terminology for **multicast** trees are similar and are presented, together with the ... In some cases, such mechanisms may allow to **translate** a de- lay requirement on a ...

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### Multicast and unicast internet protocol content distribution having a feedback mechanism for real-time and store and forward information transfer

BL McNeill, ... - US Patent 6,421,706, 2002 - Google Patents

... 7 Page 10. US 6,421,706 BI **MULTICAST AND UNICAST INTERNET PROTOCOL CONTENT** ... Embodi- ments of the invention **translate** the conference data into an appropriate number of formats for the various computing systems of the remote conference participants. ...

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### Arbitration mechanism for a multicast logic engine of a switching fabric circuit

G Hamman, ... - US Patent 5,858,667, 1999 - Google Patents

... switch is an asynchronous transfer mode (ATM) switch configured to receive both **unicast** and **multicast** ATM ... The remaining header information is 20 processed by an input **translation** function that generates (i) a key indicating whether the cell requires **multicast** replication, (ii ...

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### Efficient multicast mapping in a network switch

MN Ganmukhi, CJ White, ... - US Patent 5,503,504, 1999 - Google Patents

... One advantage associated with the present invention is the facilitation of promoting a **unicast** connection to a **multicast** connection. When address **translation** entries associated with connections are required to be contiguous, the total number of ports which may be associated ...

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### Remapping of ATM cells for multicast transmission

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### Method and system for a unicast endpoint client to access a multicast internet protocol (IP) session

DH Shur, ... - US Patent 6,259,701, 2001 - Google Patents

... The MU then receives and sends data on those groups within a session selected by client on behalf of the client. Thus, the MU functions to convert the address of the Multicast IP packets of a requested-for group to the Unicast IP endpoint address of the requesting client. ...

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### Multicast and unicast real-time video streaming over wireless LANs

A Majumdar, DG Sachs, IV Korintsev, ... and Systems for ... 2002 - [ieeexplore.ieee.org](#)

... A MDFFC MDFFC is a transcoding mechanism to convert a prioritized multiresolution bitstream (see Fig. ... Page 6. MAJUMDAR et al. MULTICAST AND UNICAST REAL-TIME VIDEO STREAMING OVER WIRELESS LANs 529 Fig. ...

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### Method for a unicast endpoint client to access a multicast internet protocol (IP) session and to serve as a redistributor of such session

SH Nurenberg, DH Shur, ... - US Patent 6,181,697, 2001 - Google Patents

... The MU then receives and sends data on those groups within a session selected by client on behalf of the client. Thus, the MU functions to convert the address of the Multicast IP packets of a requested-for group to the Unicast IP endpoint address of the requesting client. ...

Cited by 59 - Related articles - All 2 versions

### ...hop all-optical label swapping with variable length 80 Gb/s packets and 10 Gb/s labels using nonlinear fiber wavelength converters, unicast/multicast output and a ...

L Rou, S Rangarajan, DJ Blumenthal, ... and Exhibit, 2002, ... - [ieeexplore.ieee.org](#)

... A 1:8 interleaved multiplexer is used to up-convert the packets to XGbps. ... The 1.0 and 1.5 ~ ~ packets are converted to 1543nm and the 1.2 and 1.5 p packets are converted to 15481" Therefore the 1.5 microsecond packet can be either unicast or multicast while the other ...

Cited by 26 - Related articles - All 2 versions

### Method and system for communicating multimedia content in a unicast, multicast, simulcast or broadcast environment

RJ Brechtman, PF Dresser, ES Crandall, ... - US Patent ... 2004 - Google Patents

... ADDITIONAL BANDWIDTH TO UNICAST/MULTICAST/SIMULCAST UNITE USER WITH EXISTING UNICAST/MULTICAST/SIMULCAST I ... 205-210 NO ^220 215 / CREATE UNICAST ^225 230 240 YES, UNITE CELLS TO FORM SUPER-CELL 250 CONVERT TO RF ...

Cited by 29 - Related articles - All 2 versions

### Method and system for a unicast endpoint client to access a multicast internet protocol (ip) session

DH Shur, ... - EP Patent 0,902,569, 2004 - [freepatentonline.com](#)

... Unicast IP addresses. Provision is made in the firewall/proxy to limit access by the hosts to Mbone Multicasts by using a number of security provisions, and to convert Multicast addresses to the Unicast addresses of approved hosts. ...

Cited by 7 - Related articles - Cited

### An optimized multicast-based data dissemination middleware: A demonstration

W Li, W Zheng, V Liberatore, ... - Data Engineering, ... 2002 - [ieeexplore.ieee.org](#)

... If the ADU is cold, the requested ADU is returned on the unicast- pull connection. ... The objective of such gateway is to convert multicast flows from one protocol to another so that clients listening to different multicast chan- nels can communicate with each other. ...

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### 160 Gb/s variable length packet/10 Gb/s-label all-optical label switching with wavelength conversion and unicast/multicast operation

W Wang, LG Rau, ... - Technology, Journal of, 2005 - [ieeexplore.ieee.org](#)

Abstract—We report on the first demonstration of all-optical label switching (AOLS) with 160 Gb/s variable length packets and 10 Gb/s optical labels. This result demonstrates the transparency of AOLS techniques from previously demonstrated 2.5 Gb/s to this 160 Gb/s ...

Cited by 25 - Related articles - All 7 versions

### ... switching/swapping of 160 Gbps variable length packets and 10 Gbps labels using a WDM Raman enhanced XPM fiber wavelength converter with unicast/multicast ...

W Wang, L Rau, ... - Optical Fiber Communication, ... 2004 - [opticsinfobase.org](#)

Abstract: We report the first demonstration of all-optical label switching of variable-length 160 Gbps packets and swapping of 10 Gbps optical labels with real time switching and unicast/multicast operation using a WDM Raman enhanced all-optical fiber cross-phase modulation ...

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### ...-hop all-optical label swapping with variable length 80 Gb/s packets and 10 Gb/s labels using nonlinear fiber wavelength converters, unicast/multicast output and a ...

L Rau, S Ranganathan, OJ Blumenthal, ... and Exhibit, 2002, ... - [ieeexplore.ieee.org](#)

... architectures. Both unicast and multicast operation are demonstrated. BER ... hop. The second hop power penalty is only due to non-optimal filtering at the wavelength converter output and can be improved in future experiments. ...

Cited by 23 - Related articles - All 2 versions

### [CITATION] Comparison of unicast/multicast optical packet switching architectures using wavelength conversion

V Eramo, ... - Opt. Netw. Mag, 2002

Cited by 14 - Related articles

### Multicast and unicast real-time video streaming over wireless LANs

[PDF]

A Majumdar, DG Sachs, IV Kozminsev, ... and Systems for ..., 2002 - [ieeexplore.ieee.org](#)

... Page 6 MAJUMDAR et al.: MULTICAST AND UNICAST REAL-TIME VIDEO STREAMING OVER WIRELESS LANs 529 Fig. 6 Conversion of the prioritized scalable bitstream into an unprioritized one through unequal channel codes. ...

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### Light trees: optical multicasting for improved performance in wavelength routed networks

UH Sahasrabudhe, ... - Communications Magazine, ... 1999 - [ieeexplore.ieee.org](#)

... The splitter bank may be enhanced to provide optical signal amplification, wavelength conversion, and signal regeneration for "multicast" as well as "unicast" signals. For example, in Fig. 4 wavelength 1, is a unicast signal, and is a multicast signal. ...

Cited by 423 - Related articles - BL Direct - All 4 versions

### [PDF] Next-Generation Mobile-Access IP Network

[PDF]

K Hirayama, H Ghibata, H Inouchi, ... - Hitachi Review, 2000 - [hitachi.com](#)

... private address. This conversion can be implemented by additionally installing the multicast-to-unicast conversion feature on a NAT gateway to convert IPv4 multicast addresses into IPv4 private addresses. Moreover, in combination ...

Cited by 16 - Related articles - All 3 versions

### Constrained multicast routing in WDM networks with sparse light splitting

[PDF]

X Zhang, JY Wei, ... - Lightwave Technology, Journal of, 2000 - [ieeexplore.ieee.org](#)

... 1(b) (IP multicast via WDM unicast) ... Simulation is described and performance results are presented

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### Method and system for a unicast endpoint client to access a multicast internet protocol (IP)

SESSION

OH Shar, . - US Patent 6,259,701, 2001 - Google Patents

... cast client. The Unicast client is then able to participate in the Multicast session as both a sender and a receiver of packets to and from other Unicast and Multicast clients which are active during the session. Further, the Unicast ...

[Cited by 96](#) - [Related articles](#) - [All 2 versions](#)

### Method and system for multicasting cells in an ATM protocol adapter

M Cubier, M Porat, . - US Patent 6,101,187, 2000 - Google Patents

... The use of a multicast queue prevents conflicts between a flow of cells to be multicasted and even a possibly bursty flow of unicast cells from the switch fabric. The multicast table offers a flexible system for easily updating new cells processed by each protocol adapter. ...

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### ATM cell multicasting method and apparatus

A Azari, J Calvignat, D Orsath, D Rigat, . - US Patent . . . 1997 - Google Patents

... pointers to the queues dedicated to the output ports attached The enqueue and dequeue processes are also the same for to the adapter 120. A cell buffer, preferably a sixty-four byte unicast and multicast cells. «c structure 202, resides in a transmit side store 200. ...

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### An architecture for wide-area multicast routing

S Deering, D Estrin, D Farinacci, . - Proceedings of the . . . 1994 - portal.acm.org

... adapt to different multicast group and network characteristics; (c) is not dependent on a specific unicast routing protocol; and (d) uses soft-state mechanisms to adapt to underlying network conditions and group dynamics. ...

[Cited by 562](#) - [Related articles](#) - [BI Direct](#) - [All 12 versions](#)

[PD]

### The PIM architecture for wide-area multicast routing

S Deering, DL Estrin, D Farinacci, . - . /ACM Transactions on . . . 1996 - portal.acm.org

... Routing Protocol Independence: The protocol should rely on existing unicast routing functionality to adapt to topology changes, but at the same time be independent of the particular protocol employed. We accomplish this by letting the multicast protocol make use of the ...

[Cited by 679](#) - [Related articles](#) - [BI Direct](#) - [All 14 versions](#)

[HI]

### Inferring link loss using striped unicast probes

NG Duffield, L Presti, V Paxson, . - . . 2001, Twentieth Annual . . . 2001 - IEEE Explore IEEE.org

... B. Contribution In this paper we adapt the multicast inference techniques proposed in [2] to perform inference of internal network characteristics from unicast end-to-end measurements. The data for the inference comprises ...

[Cited by 197](#) - [Related articles](#) - [BI Direct](#) - [All 11 versions](#)

[PD]

### Multicasting protocols for high-speed, wormhole-routing local area networks

M Gera, P Palnathi, . - Conference proceedings on . . . 1996 - portal.acm.org

... several features in the crossbar switch that go beyond the basic requirements for unicast worm handling ... That is, the host adapter, upon receiving the multi-cast worm, copies it to its local host and at the same time retransmits it to one or more hosts in the same multicast group. ...

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[PD]

### Method and apparatus for on demand multicast and unicast using controlled flood multicast communications

YJ Liu, JJ Visvader, . - US Patent 7,164,421, 2007 - Google Patents

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### [\(PDF\) The group domain of interpretation](#)

[PDF]

M Baugher, T Hardjono, H Harney ... - *Work in Progress*, 2002 - [ieff.org](#)

... Category-3 SA Initial Setup (unicast) (Pull) (Push) ... 30 SA Payload Usage Examples • A multicast application could include SA\_KEK and SA\_TEKs in the pull and ... DOI = 1, NP=Nonce Proposal Payload, NP=Proposal Transform Payload, NP=Transform Transform Payload, NP=0 ...

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### [Construction of an efficient overlay multicast infrastructure for real-time applications](#)

[PDF]

S Banerjee, C Kommareddy, K Kar ... - *Joint Conference of ...*, 2003 - [ieeexplore.ieee.org](#)

... Consider a multicast application in which the source injects traffic at the rate of B units per second. ... if the transformation is performed, and L<sub>k,i</sub> and L<sub>k,j</sub> denotes the same prior to the transformation. Each MSN maintains unicast latency estimates of all its neighbors on the tree. ...

[Cited by 379](#) - [Related articles](#) - [BI Direct](#) - [All 36 versions](#)

### [RMX: Reliable multicast for heterogeneous networks](#)

[PDF]

Y Chawathe, S McCarne ... - *1999. Nineteenth Annual ...*, 2000 - [ieeexplore.ieee.org](#)

... Each link into the RMX has an associated link agent that implements the specific details of the (unicast or multicast) reliability protocol. ... The agent relies on specialized transformation engines to potentially convert the data into a different representation before forwarding it. ...

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### [Optimization-based congestion control for multicast communications](#)

[PDF]

J Shapiro, D Towse ... - *NETWORKING 2002: Networking ...*, 2000 - Springer

... We feel that this is a natural assumption in the case of single-rate multicast. The second requirement is that both sender- and receiver-oriented utility functions should reduce to the same standard unicast utility function up to a linear transformation when R = 1. These two ...

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### [Multicasting. Will it transform the Internet?](#)

G Lawton - *Computer*, 1988 - [ieeexplore.ieee.org](#)

... intranets. And proponents say it could 'radically transform the network. ... nology. However, Almeroth said, the multicast approach would be far more bandwidth-efficient than the unicast model used by such push vendors as PointCast. Meanwhile ...

[Cited by 6](#) - [Related articles](#) - [All 3 versions](#)

### [\(PDF\) Optimal time slot assignment algorithm for combined unicast and multicast packets](#)

[PDF]

HS Lee, UG Joe, HH Lee ... - *ETRI Journal*, 2002 - [etj.etri.co.kr](#)

... N for input port i and output port/ is at least  $\lceil j/i \rceil + m$  and least for all the unicast traffic  $\lceil 2j \rceil$ . Step 2. Transform, if necessary, the given traffic matrix A into A' so as to be  $\wedge$ -complete with respect to B ... find A' as  $A' = A \cdot U^{-1}$  where  $L = \max \{ \text{row sum, column sum for } U' \text{ part, } 2 \cdot h \}$  multicast ports for ...

[Cited by 7](#) - [Related articles](#) - [BI Direct](#) - [All 3 versions](#)

### [Security issues and solutions in multicast content distribution: A survey](#)

[PDF]

P Judge ... - *Network, IEEE*, 2003 - [ieeexplore.ieee.org](#)

... These efforts have continued to transform multicast into a technology that can be relied on by ... Security Issues and Solutions These properties of multicast lead to security issues and vulnerabilities because ... issues are multi-cast-specific or the issues also exist in unicast, but the ...

[Cited by 132](#) - [Related articles](#) - [BI Direct](#) - [All 15 versions](#)

### [On Unicast based Recovery for Multicast Content Distribution considering XOR-FEC](#)

C Sarika, T Hasegawa ... - *2005 Asia-Pacific ...*, 2005 - [ieeexplore.ieee.org](#)

... In particular LT (Luby Transform) codes are effective in a heterogeneous multicast environment ... time can be restricted due to operational reasons considering multicast resource efficiency ... download completion under such conditions, we newly designed a unicast based recovery ...